

APR 30 2008

Application No. 10/579,325
Supplemental Amendment dated April 30, 2008
Reply to Office Action of October 9, 2007

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Docket No.: 65583(71678)

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A valve for use in a downhole tool, the valve comprising a substantially tubular body including a first end for connection to a wireline lock or packer in a work string, the first end having a first inlet for communicating with a ~~the~~ work string providing a flow path of a first cross-sectional area; one or more ports located on the body, the ports providing a flow path of a combined cross-sectional area greater than the first cross-sectional area; a sealing assembly comprising a seal cap moveable in relation to the body to open and close the ports; wherein fluid flow through the inlet moves the seal cap to open the valve and create an unimpeded flow path between the inlet and the ports with negligible pressure drop.
2. (Original) A valve as claimed in Claim 1 wherein the combined cross-sectional area of the ports is greater than half the surface area of the tubular body at the ports.
3. (Previously Presented) A valve as claimed in Claim 1 wherein the seal cap is a poppet having a first sealing surface and a second sealing surface is a seat located on an inner surface of the tubular body such that when the surfaces contact they form a seal to close the valve.
4. (Original) A valve as claimed in Claim 3 wherein the sealing assembly includes biasing means to bias the poppet and the first sealing surface towards the second sealing surface.
5. (Original) A valve as claimed in Claim 4 wherein the biasing means is a spring, the spring enclosed within a housing.

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6. (Previously Presented) A valve as claimed in Claim 1 wherein the valve includes pressure release means to open the valve at a predetermined fluid pressure.
7. (Original) A valve as claimed in Claim 6 wherein the pressure release means is a shear ring which rated to shear at the desired pressure.
8. (Previously Presented) A valve as claimed in Claim 4 wherein a load adjuster is located between the biasing means and the first surface to vary the load applied by the first surface upon the second surface.
9. (Previously Presented) A valve as claimed in Claim 1 wherein the valve is a high lift injection valve.
10. (Previously Presented) A method of injecting fluid into a well bore, the method comprising the steps:
 - (a) locating an injection valve on an anchoring device at an end of a work string;
 - (b) running the string to a required depth;
 - (c) sealing the string to a wall of the well bore using the anchoring device;
 - (d) passing fluid at a first pressure through the work string; and
 - (e) using the fluid to open the valve and thereby inject fluid through an unimpeded path through the valve into the well bore while maintaining fluid pressure at the first pressure.
11. (Previously presented) A method as claimed in Claim 10 wherein the injection valve is according to any one of Claims 1 to 9.

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12. (Previously Presented) A method as claimed in Claim 10 wherein the method includes the step of trapping pressure below the valve.

13. (Previously Presented) A method as claimed in Claim 10 wherein the method includes the step of performing one or more pressure tests above the valve.

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14. (Currently amended) A valve for use in a downhole tool, the valve comprising a substantially tubular body including a first end for connection to a wireline lock or packer in a workstring, the first end having a first inlet for communicating with the work string providing a flow path of a first cross-sectional area;

one or more ports located on the body, the ports providing a flow path of a combined cross-sectional area greater than the first cross-sectional area;

a sealing assembly comprising:

a seal cap moveable in relation to the body to open and close the ports; wherein the seal cap is a poppet having a first sealing surface and a second sealing surface is a seat located on an inner surface of the tubular body such that when the first and second sealing surfaces contact they form a seal to close the valve;

biasing means to bias the poppet and the first sealing surface towards the second sealing surface;

and a load adjuster is located between the biasing means and the first surface to vary the load applied by the first surface upon the second surface; and

wherein fluid flow through the inlet moves the seal cap to open the valve and create an unimpeded flow path between the inlet and the ports with negligible pressure drop.

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15. (Previously presented) A method of injecting fluid into a well bore, the method comprising the steps:

- (a) locating an injection valve on an anchoring device at an end of a work string;
 - (b) running the string to a required depth;
 - (c) sealing the string to a wall of the well bore using the anchoring device;
 - (d) passing fluid at a first pressure through the work string; and
 - (e) using the fluid to open the valve and thereby inject fluid through an unimpeded path through the valve into the well bore while maintaining fluid pressure at the first pressure;
- wherein the valve includes:

- i. a substantially tubular body having a first end for connection to a wireline lock or packer in the workstring, the first end having a first inlet communicating with the work string providing a flow path of a first cross-sectional area;

- ii. one or more ports located on the body, the ports providing a flow path of a combined cross-sectional area greater than the first cross-sectional area; and

- iii. a sealing assembly comprising:

- a seal cap moveable in relation to the body to open and close the ports; wherein the seal cap is a poppet having a first sealing surface and a second sealing surface is a seat located on an inner surface of the tubular body such that when the first and second sealing surfaces contact they form a seal to close the valve;

- biasing means to bias the poppet and the first sealing surface towards the second sealing surface;

and a load adjuster is located between the biasing means and the first surface to vary the load applied by the first surface upon the second surface.

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